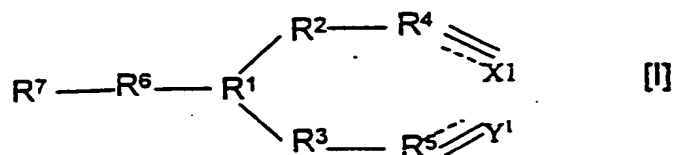


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Claims

1. A method of adhering or sealing surfaces, said method comprising applying to at least one surface, a compound of
5 formula (I)

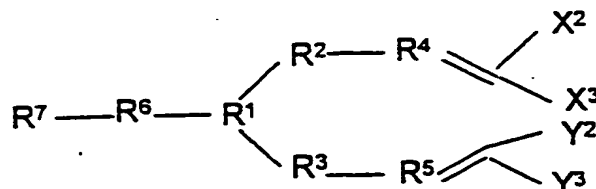


- where R^1 is CH and R^6 is a bond, or R^1 and R^6 together form an
10 electron withdrawing group;
 R^2 and R^3 are independently selected from $(\text{CR}^8\text{R}^9)_n$, or a group
 CR^9R^{10} , $-(\text{CR}^8\text{R}^9\text{CR}^9\text{R}^{10})-$ or $-(\text{CR}^9\text{R}^{10}\text{CR}^8\text{R}^9)-$ where n is 0, 1 or 2, R^8
and R^9 are independently selected from hydrogen or alkyl, and
either one of R^9 or R^{10} is hydrogen and the other is an electron
15 withdrawing group, or R^9 and R^{10} together form an electron
withdrawing group,
 R^4 and R^5 are independently selected from CH or CR^{11} where R^{11} is
an electron withdrawing group, and
 R^7 is hydrogen, an optionally substituted hydrocarbyl group, a
20 perhaloalkyl group or a functional group;
the dotted lines indicate the presence or absence of a bond, and
 X^1 is a group CX^2X^3 where the dotted line bond to which it is
attached is absent and a group CX^2 where the dotted line bond to
which it is attached is present, Y^1 is a group CY^2Y^3 where the
25 dotted line bond to which it is attached is absent and a group
 CY^2 where the dotted line bond to which it is attached is
present, and X^2 , X^3 , Y^2 and Y^3 are independently selected from
hydrogen and fluorine;
provided that at least one of (a) R^1 and R^6 or (b) R^2 and R^3 or
30 (c) R^4 and R^5 includes an electron withdrawing group;
and where necessary, a polymerisation initiator, allowing the
compound of formula (I) to polymerise in contact with a second
surface such that the said surfaces are adhered or sealed.

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2. A method according to claim 1 wherein the compound of formula (I) is a compound of formula (IA)



(IA)

where R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , X^2 , X^3 , Y^2 and Y^3 are as defined in claim 1.

3. A method according to claim 1 or claim 2 wherein the compound of formula (I) is polymerised under the influence of radiation or an electron beam, or by reaction with a chemical initiator.

4. A method according to claim 3 wherein the compound of formula (I) is polymerisable under the influence of ultra violet or thermal radiation.

5. A method according to claim 4 wherein the compound of formula (I) is curable under the influence of ultraviolet light.

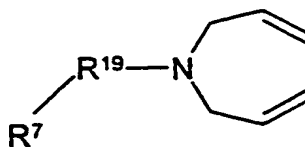
6. A method according to claim 5 which comprises a polymerisation initiator which is a photoinitiator.

7. A method according to any one of the preceding claims wherein R^1 and R^6 form an electron withdrawing group.

8. A method according to claim 7 wherein in the compound of formula (I), R^2 and R^3 are groups $(\text{CR}^8\text{R}^8)_n$ and R^4 and R^5 are CH groups.

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9. A method according to claim 7 or claim 8 wherein in the compound of formula (I), R^1 is a heteroatom or a substituted heteroatom which has electron withdrawing properties.
- 5 10. A method according to claim 9 where R^1 is a $N^+R^{12}(Z^{m-})_{1/m}$, $S(O)_pR^{13}$, B or $P(O)_qR^{14}$ where R^{12} , R^{13} and R^{14} are independently selected from hydrogen or hydrocarbyl, Z is a anion of valency m, p is 0, 1 or 2, and q is 0, 1, 2 or 3.
- 10 11. A method according to claim 10 where R^1 is a $N^+R^{12}(Z^{m-})_{1/m}$ group where R^{12} , Z and m are as defined in claim 8.
12. A method according to claim 10 or claim 11 where Z is halogen.
- 15 13. A method according to claim 11 or claim 12 where R^{12} is alkyl.
14. A method according to any one of claims 1 to 8 where R^1 is a group CH and R^6 is a group $-C(O)O-$ or $-OC(O)-$ or $-S(O)_2-$.
- 20 15. A method according to claim 14 where R^1 is a group CH and R^6 is a group $-C(O)O-$ or $-OC(O)-$.
- 25 16. A method according to any one of claims 1 to 8 wherein R^1 is nitrogen, R^6 is C(O), C(S) or S(O)₂.
17. A method according to claim 16 where the compound of formula (I) is a compound of structure (II)



(II)

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where R^7 is as defined in claim 1 and $-R^{19}-$ is $C(O)$, $C(S)$ or $S(O)_2$.

18. A method according to any one of claims 1 to 6 where R^2 and
5 R^3 includes an electron withdrawing group.

19. A method according to claim 18 where at least one of R^2 or
 R^3 include electron withdrawing groups R^9 and R^{10} .

10 20. A method according to claim 19 wherein R^9 and R^{10} together
form an oxo group.

21. A method according to any one of the preceding claims
wherein R^7 comprises a hydrocarbyl group optionally substituted
15 by a functional group.

22. A method according to any one of the preceding claims
wherein R^7 includes an unsaturated moiety.

20 23. A method according to claim 22 wherein the unsaturated
moiety is an aryl or alkenyl group, or a carbonyl substituent.

24. A method according to claim 21 wherein R^7 is an optionally
substituted alkyl, alkenyl, alkynyl or aryl group.

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25. A method according to claim 24 wherein R^7 is substituted by
halogen, carboxy or salts thereof or acyloxy.

26. A method according to any one of claims 21 to 22 where R^7 is
30 a perhaloalkyl group which comprises from 1 to 3 carbon atoms.

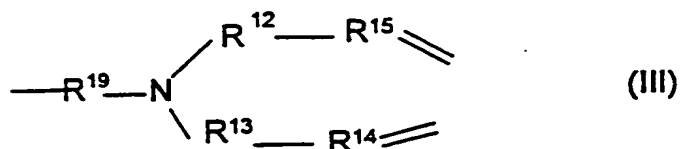
27. A method according to claim 26 where R^7 is a perhalomethyl
group.

35 28. A method according to claim 21 where R^7 is a dialkenyl
substituted amide.

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29. A method according to claim 28 wherein the amide is of sub formula (III)

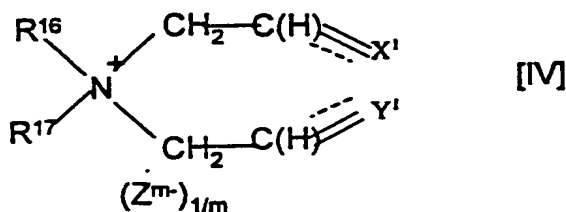


5 where R^{19} is as defined in claim 16, R^{12} and R^{13} are selected from groups defined above for R^2 and R^3 in relation to formula (I) and R^{14} and R^{15} are selected from groups defined above as R^3 and R^4 in relation to formula (I).

10 30. A method according to claim 29 where R^{12} and R^{13} are $-\text{CH}_2-$ or $-\text{CH}_2\text{CH}_2-$ groups and R^{14} and R^{15} are $-\text{CH}-$ groups.

31. A method according to any one of claims 1 to 3 wherein the compound of formula (I) is a compound of formula (IV)

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20 where X^1 , Y^1 , Z , m and the dotted lines are as defined in claim 2, the hydrogen atoms in bracket are absent when the dotted lines represent the presence of a bond, and R^{16} and R^{17} are independently selected from hydrogen and hydrocarbyl optionally substituted with hydroxy.

32. A method according to claim 31 wherein R^{16} and R^{17} are selected from alkyl, hydroxyalkyl and alkenyl.

25 33. A method according to claim 32 wherein R^{16} and R^{17} are prop-2-enyl or hydroxyalkyl.

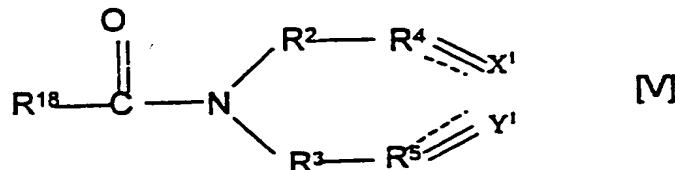
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34. A method according to claim 33 wherein hydroxyalkyl is a group of formula $-C((CH_2)_dOH)_a(H)_b$ where a is an integer of from 1 to 3 and b is 0 or an integer of 1 or 2 provided that a+b is 3, and d is an integer of from 1 to 6.

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35. A compound of formula



where R^2 , R^3 , R^4 , R^5 , X^1 and Y^1 are as defined in claim 1 and R^{18} is an optionally substituted alkyl, alkenyl, alkynyl or aryl group provided that where R^2 and R^3 are both CH_2 and R^4 and R^5 are both CH , R^{18} is other than methyl, chloromethyl, trichloromethyl or trifluoromethyl.

36. The use of a compound of formula (I) as defined in claim 1 in an adhesive composition.

37. The use of a compound of formula (I) as defined in claim 1 in a sealant composition.

20

38. An article which includes at least two surfaces which are adhered together by means of a compound of formula (I) as defined in claim 1 which has been polymerised.

39. An article according to claim 38 wherein the surfaces comprise glass or metal surfaces or a mixture of these.

40. An article according to claim 38 or claim 39 wherein the polymerised compound of formula (I) provides an electrically conducting layer.

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41. A biomedical adhesive which comprises a biocompatible compound of formula (I) as defined in claim 1.

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42. The use of a compound of formula (I) as defined in claim 1 in a method according to any one of claims 1 to 34.